

IN THE CLAIMS

50. (previously amended) An optical coupling device comprising:

an optical lens array including a lens substrate made from an optical material and having a plurality of convex portions extending therefrom, a convex portion of said plurality of convex portions having a convex shape and comprising a material the same as that of said lens substrate,

said lens substrate having a mask layer on the surface thereof, said mask layer comprising a material different than that of said lens substrate,

a height of said convex portion being specified on the basis of a thickness of said mask layer.

51. (previously amended) An optical coupling device according to claim 50, wherein the curvature of said convex portion is specified on the basis of a diameter of said mask layer.

52. (previously amended) An optical coupling device according to claim 50, wherein the curvature of said convex portion is specified on the basis of a thickness of said mask layer.

53. (previously amended) An optical coupling device according to claim 50, wherein said plurality of convex portions are arrayed on said lens substrate.

54. (previously amended) An optical coupling device according to claim 50, wherein said optical material includes quartz or silicon oxide.

55. (previously amended) An optical coupling device according to claim 50, wherein said mask layer is composed of a photoresist.

56. (previously amended) An optical coupling device according to claim 50, wherein a convex portion of said plurality of convex portions is an optical lens portion of a plurality of optical lens portions.

57. (previously amended) An optical coupling device according to claim 50, wherein said mask layer comprises a plurality of mask layer portions.

58. (previously amended) An optical coupling device according to claim 57, wherein a mask layer portion of said plurality of mask layer portions and part of said lens substrate are simultaneously removed.

59. (previously amended) An optical coupling device according to claim 57, wherein a mask layer portion of said plurality of mask layer portions is separate and distinct from another of said plurality of mask layer portions.

60. (previously amended) An optical coupling device according to claim 57, wherein said lens substrate is exposed between said mask layer portion and another of said plurality of mask layer portions.

61. (previously amended) An optical coupling device according to claim 57, wherein a mask layer portion of said plurality of mask layer portions has a curved surface.

62. (previously amended) An optical coupling device according to claim 57, wherein a location of a mask layer portion of said plurality of mask layer portions correspond to a formation region of said convex portion.

63. (previously amended) An optical coupling device according to claim 50, wherein a light absorber having apertures is formed on said lens substrate.

64. (previously amended) An optical coupling device according to claim 50, wherein a groove is formed in said lens substrate between said convex portion and another of said plurality of convex portions.

65. (previously amended) An optical coupling device according to claim 50, further comprising:

a light outgoing member having an array of a plurality of light outgoing portions, a light outgoing portion of said a plurality of light outgoing portions emitting light; and

a light incoming member having a plurality of light incoming portions, a light incoming portion of said a plurality of light incoming portions receiving said light, said light incoming portion corresponding to said light outgoing portion,

wherein said optical lens includes a plurality of optical lens portions, an optical lens portion of said plurality of optical lens portions corresponding to said light outgoing portion and said light incoming portion.

66. (previously amended) An optical coupling device according to claim 65, wherein said light outgoing member is a light emitting device array having an array of a plurality of light emitting portions.

67. (previously amended) An optical coupling device according to claim 66, wherein said light emitting device array is a light emitting diode array.

68. (previously amended) An optical coupling device according to claim 65, wherein said light incoming member is an array of a plurality of optical fibers.

69. (previously amended) An optical coupling device according to claim 68, wherein said plurality of optical fibers is arrayed in such a manner that outer peripheral portions of adjacent two of said plurality of optical fibers are in contact with each other.

70. (previously amended) An optical coupling device according to claim 65, wherein said light outgoing member is an array of a plurality of optical fibers.

71. (previously amended) An optical coupling device according to claim 65, wherein said light incoming member is a light receiving device array having an array of a plurality of light receiving portions.

72. (previously amended) An optical coupling device according to claim 71, wherein said light receiving device array

is formed by arraying said light receiving portions on a light receiving device substrate.

73. (previously amended) An optical coupling device according to claim 71, wherein said optical fibers are arrayed in such a manner that outer peripheral portions thereof are in contact with each other.

74. (previously amended) An optical coupling device according to claim 71, wherein said light receiving device array is a photodiode array.

75. (previously amended) An optical coupling device according to claim 65, wherein part of each of said light incoming member and said light outgoing member is an array of a plurality of optical fibers.

76. (previously amended) An optical coupling device according to claim 74, wherein the rest of said light outgoing member is a light emitting device array having an array of a plurality of light emitting portions, and the rest of said light incoming member is a light receiving device array having an array of a plurality of light receiving portions.

77. (previously amended) An optical coupling device according to claim 74, wherein said light emitting portions of said light emitting device array as the rest of said light outgoing member and said light receiving portions of said light receiving device array as the rest of said light incoming member are arrayed on the same device substrate.

78. (previously amended) An optical coupling device according to claim 74, wherein said optical fibers are arrayed in such a manner that outer peripheral portions thereof are in contact with each other.

79. (previously amended) An optical coupling device comprising:

a light outgoing member having an array of a plurality of light outgoing portions, a light outgoing portion of said a plurality of light outgoing portions emitting light;

a light incoming member having a plurality of light incoming portions, a light incoming portion of said a plurality of light incoming portions receiving said light, said light incoming portion corresponding to said light outgoing portion; and

an optical lens array including a lens substrate made from an optical material and having a plurality of convex portions extending therefrom, a convex portion of said plurality of convex

portions having a convex shape and comprising a material the same as that of said lens substrate,

said lens substrate having a mask layer on the surface thereof, said mask layer having a plurality of mask layer portions and comprising a material different than that of said lens substrate, a mask layer portion of said plurality of mask layer portions has a curved surface, a location of said mask layer portion corresponding to a formation region of said convex portion,

said lens substrate being exposed between said mask layer portion and another of said plurality of mask layer portions,

a height and curvature of said convex portion being specified on the basis of a thickness of said mask layer.